Claims

1. A self-assembled biomolecular structure comprising affinity modules, said affinity modules each having at least two affinity domains which may be the same or different, at least one affinity domain within each affinity module having specific and exclusive affinity for an affinity domain within another affinity module, said affinity modules capable of biospecific interaction to form an assembled structure.

2. A structure as claimed in claim 1 wherein at least one of the affinity domains comprises a protein molecule.

3. A structure as claimed in claim 2 wherein each affinity module comprises at least one affinity domain which comprises a protein molecule.

4. A structure as claimed in claim 3 wherein all affinity domains comprise a protein molecule.

5. A structure as claimed in any one of the preceding claims which comprises at least two different types of affinity module.

6. A structure as claimed in any one of the preceding claims which comprises at least 4 different types of affinity domain.

7. A structure as claimed in any of the preceding claims which comprises at least two pairs of affinity domains, each of said pairs having specific and exclusive affinity for each other.

8. A structure as claimed in any one of the preceding claims wherein one or more of the affinity domains has

been selected from a molecular library.

9. A structure as claimed in any one of the preceding claims which comprises at least one affinity module which has two or more different affinity domains.

10. A structure as claimed in any one of the preceding claims which comprises at least one affinity module which has two or more functionally equivalent affinity domains and at least one affinity module which has two or more different affinity domains.

11. A structure as claimed in any one of the preceding claims wherein one or more of the affinity domains is or is derived from a domain of a naturally occurring bacterial receptor.

12. A structure as claimed in claim 11 wherein said bacterial receptor is *Staphylococcal* protein A (SPA).

13. A structure as claimed in claim 12 wherein the affinity domain is derived from the B domain of SPA.

14. A method of preparing a combinatorial library of protein molecules, molecules selected from said library being for use in an affinity module as defined in claim 1.

15. A method of selecting a molecule for use in an affinity module as defined in claim 1, wherein said molecule is selected from a molecular library on the basis of its ability to bind to a target molecule.

16. Use of a molecule selected from a molecular library as an affinity domain in a self-assembled biomolecular structure as claimed in any one of claims 1 to 13.

17. A proteinaceous affinity module which comprises two or more proteinaceous affinity domains which may be the same or different, each affinity domain having specific and exclusive affinity for a given binding partner, wherein at least one of the affinity domains has been selected from a molecular library.

18. An affinity module as claimed in claim 17 wherein one or more of the affinity domains is capable of specific and exclusive interaction with a bacterial receptor domain.

19. An affinity module as claimed in claim 17 or 18 wherein one of the affinity domains is derived from a bacterial receptor domain.

20. A protein molecule having the amino acid sequence of SEQ ID No. 2 or variants thereof having substantially the same affinity for SPA.

21. A protein molecular having the amino acid sequence of SEQ ID No. 3 or variants thereof having substantially the same affinity for SPA.

22. A nucleic acid molecule encoding the affinity module or protein as defined in any one of claims 17 to 21.

23. A cell transfected with the nucleic acid molecule of claim 22.

24. A method of producing a self-assembled biomolecular structure, which comprises admixing affinity modules as defined in any preceding claim in an environment which enables biospecific interaction between the affinity domains thereof.

25. A structure as claimed in any one of claims 1 to 14 for use in therapy.

26. Use in an *ex vivo* diagnostic method of a structure as claimed in any one of claims 1 to 14.